

In the Claims:

Please amend the claims as indicated.

1. (Currently amended) An apparatus for alternate control of a storage array, the apparatus comprising:

a RAID controller operably connected to a storage array, the RAID controller configured to receive storage commands from a host computer and execute corresponding operations on the storage array;

a storage adapter residing on the host computer, the storage adapter operably connected to the storage array independent of the RAID controller, the storage adapter configured to transmit storage commands to a selected storage device within the storage array; and

a control module residing on the host computer, the control module configured to selectively direct storage commands to the RAID controller and the storage adapter, wherein in response to detecting a RAID controller fault the control module retrieves RAID configuration information from the RAID controller, quiesces the RAID controller, and directs storage commands to the storage adapter so that the storage adapter emulates the RAID controller in conducting RAID operations on the storage array.

2. (Original) The apparatus of claim 1, wherein the storage adapter is selected from the group consisting of a SCSI adapter, an SSA adapter, a fiberchannel adapter, and an IDE adapter.
3. (Original) The apparatus of claim 1, wherein the control module comprises a multipath software layer.

4. (Original) The apparatus of claim 1, wherein the RAID controller is selected from the group consisting of a SCSI RAID controller, an SSA RAID controller, a fiberchannel RAID controller, and an IDE RAID controller.
5. (Currently amended) The apparatus of claim 1, wherein the RAID controller resides on the host computer.
6. (Currently amended) The apparatus of claim 1, further comprising a controller adapter residing on the host computer, the controller adapter configured to operably connect the host computer ~~to~~ and the RAID controller.
7. (Canceled)
8. (Canceled)
9. (Original) The apparatus of claim 1, wherein the control module is further configured to disable the RAID controller.
10. (Canceled)
11. (Currently amended) The apparatus of claim 1, wherein the control module is further configured to conduct operations selected from the group consisting of read operations, write operations, recovery operations, ~~diagnostic operations~~, formatting operations, and firmware update operations.

12. (Original) The apparatus of claim 1, wherein the control module comprises a driver configured to translate operating system calls to storage commands.

13. (Currently amended) A method for alternate control of a storage array, the method comprising:

transmitting storage commands to a RAID controller configured to conduct storage operations on a storage array;

transmitting storage commands via a storage adapter to a selected storage device within the storage array; and

selectively directing storage commands to the RAID controller and the storage adapter, wherein storage commands are directed to the storage adapter in response to detecting a RAID controller fault by retrieving RAID configuration information from the RAID controller, quiescing the RAID controller, and directing storage commands to the storage adapter so that the storage adapter emulates the RAID controller in conducting RAID operations on the storage array.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Original) The method of claim 13, further comprising disabling the RAID controller.

19. (Canceled)

20. (Currently amended) The method of claim 13, further comprising conducting storage operations via the storage adapter, wherein the storage operations are selected from the group consisting of read operations, write operations, recovery operations, ~~diagnostic operations~~, formatting operations, and firmware update operations.

21. (Original) The method of claim 13, further comprising disabling the storage adapter.

22. (Original) The method of claim 13, further comprising quiescing the storage adapter.

23. (Original) The method of claim 13, further comprising translating operating system calls to storage operations.

24. (Currently amended) A system for alternate control of a storage array, the system comprising:

a host computer;

a storage array comprising a plurality of storage devices;

a RAID controller operably connected to the storage array, the RAID controller configured to receive storage commands and conduct storage operations on the storage array in response to commands received from the host computer;

a storage adapter operably connected to the storage array independent of a storage controller, the storage adapter configured to transmit storage commands to a selected storage device within the storage array; and

a control module residing on the host computer, the control module configured to selectively direct storage commands to the RAID controller and the storage adapter, wherein in response to detecting a RAID controller fault the control module retrieves RAID configuration information from the RAID controller, quiesces the RAID controller, and directs storage commands to the storage adapter so that the storage adapter emulates the RAID controller in conducting RAID operations on the storage array.

25. (Currently amended) ~~A computer readable image comprising a~~Computer readable program code for alternate control of a storage array, the program code configured to:

transmit storage commands to a RAID controller configured to conduct RAID operations on a storage array;

transmit storage commands via a storage adapter to a selected storage device within the storage array; and

selectively direct storage commands to the RAID controller and the storage adapter, wherein storage commands are directed to the storage adapter in response to detecting a RAID controller fault by retrieving RAID configuration information from the RAID controller, quiescing the RAID controller, and directing storage commands to the storage adapter so that the storage adapter emulates the RAID controller in conducting RAID operations on the storage array.

26. (Canceled)

27. (Currently amended) The computer readable ~~image~~program code of claim 25, wherein the program code is further configured to disable the RAID controller.

28. (Canceled)

29. (Currently amended) A method for servicing a storage array, the method comprising:

operably connecting a storage array to a storage adapter independent of a RAID controller, the storage adapter configured to transmit storage commands to a selected storage device within the storage array, the storage adapter residing in a host computer; and

installing a control module residing on the host computer, the control module configured to selectively direct storage commands to the RAID controller and the storage adapter, wherein in response to detecting a RAID controller fault the control module retrieves RAID configuration information from the RAID controller, quiesces the RAID controller, and directs storage commands to the storage adapter so that the storage adapter emulates the RAID controller in conducting RAID operations on the storage array.

30. (Original) The method of claim 29, further comprising disabling the RAID controller.

31. (Original) The method of claim 29, further comprising transferring control of the storage array to the storage adapter.

32. (Original) The method of claim 29, further comprising servicing the RAID controller.

33. (Original) The method of claim 29, further comprising updating firmware within a storage device.

34. (Original) The method of claim 29, further comprising conducting diagnostic operations.

35. (Original) The method of claim 29, further comprising conducting recovery operations.

36. (New) The system of claim 24, wherein the RAID storage operations are selected from the group consisting of read operations, write operations, recovery operations, formatting operations, and firmware update operations.
37. (New) The computer readable program code of claim 25, wherein the RAID storage operations are selected from the group consisting of read operations, write operations, recovery operations, formatting operations, and firmware update operations.
38. (New) The method of claim 29, wherein the RAID storage operations are selected from the group consisting of read operations, write operations, recovery operations, formatting operations, and firmware update operations.